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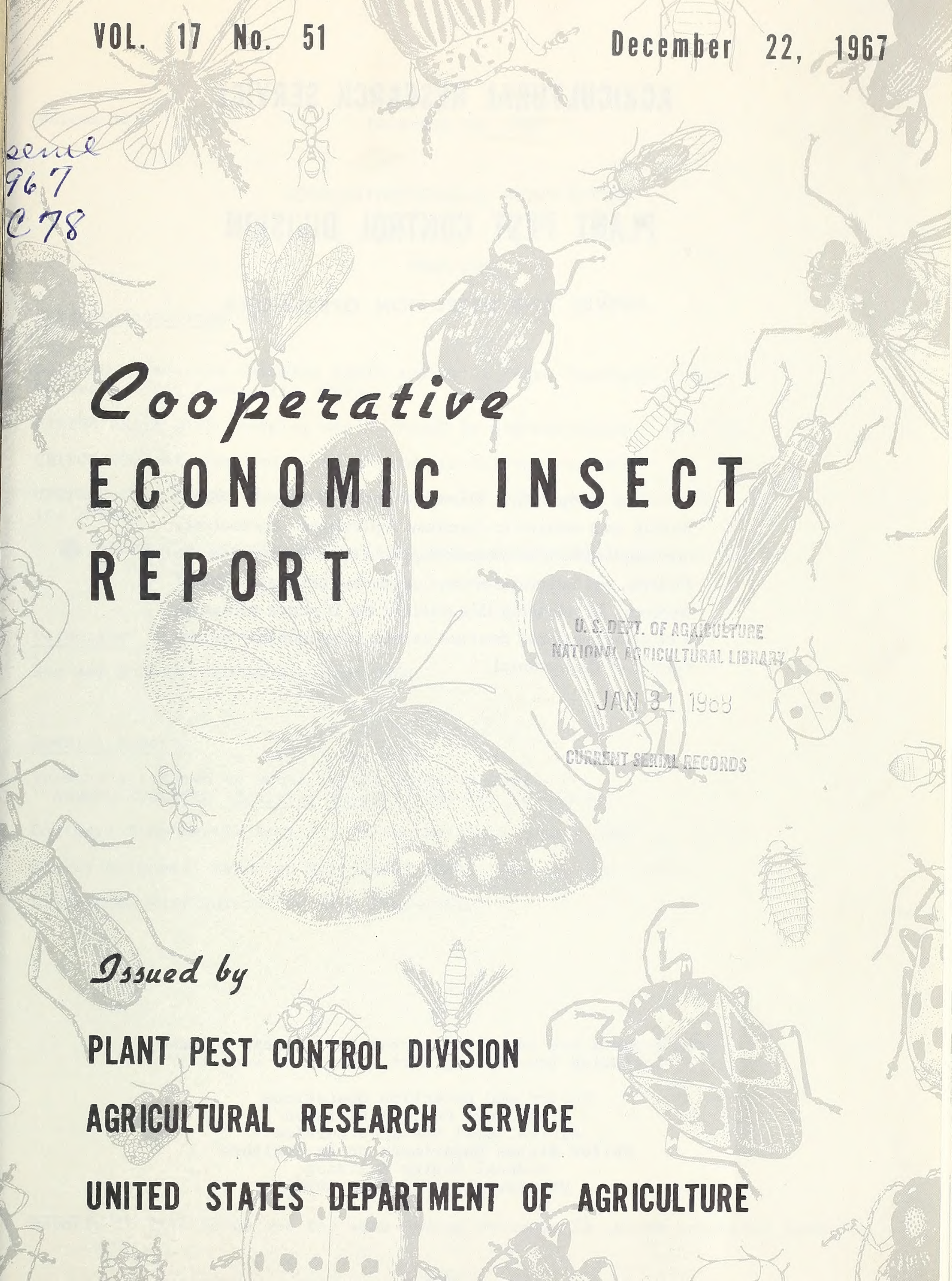

Cooperative
ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

Volume 17 December 22, 1967 Number 51

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG heavy and damaging small grains in Texas Panhandle; heavy in wheat in Monona County, Iowa. (p. 1065).

WINTER GRAIN MITE damaging small grains in central Texas. (p. 1065).

CHINCH BUG not expected to be problem in Illinois in 1968. (p. 1065).

WESTERN PINE BEETLE survey conducted on 350,000 acres in western Texas. (p. 1067).

● GOLDEN NEMATODE found for first time outside Long Island in New York. (p. 1068).

Detection

For new county records see page 1068.

Special Reports

Insects Not Known to Occur in the United States
ALMOND SCOLYTID (Scolytus amygdali Guerin) (p. 1077).

Southern Pine Beetle Activity in Southeastern Area - 1967 (p. 1070).

Survey Methods. Selected References 1961. Part V. (p. 1071).

Black Stem Rust Quarantine Map. Centerfold.

Reports in this issue are for week ending December 15 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance....................1065

Insects Affecting

Small Grains....................1065
Turf, Pastures, Rangeland........1065
Forage Legumes....................1065
General Vegetables...............1066
Deciduous Fruits and Nuts........1066
Citrus...........................1066
Ornamentals......................1066
Forest and Shade Trees...........1067
Man and Animals..................1067
Stored Products..................1068

Federal and State Plant Protection Programs....................1068
Insect Detection....................1068
Corrections....................1068
Hawaii Insect Report....................1069
Southern Pine Beetle Activity in Southeastern Area - 1967....................1070
Survey Methods. Selected References 1961. Part V....................1071
Insects Not Known to Occur in the United States
Almond Scolytid (Scolytus amygdali Guerin)....................1077
Black Stem Rust Quarantine Map. Centerfold.

WEATHER OF THE WEEK ENDING DECEMBER 18

HIGHLIGHTS: Violent weather struck much of the Nation during the past week. Record snows occurred in the Southwest, tornadoes struck the Deep South, freezing rain iced the Great Plains, and the coldest temperatures of the season spread over the northern Rockies.

PRECIPITATION: Heavy snow fell in southern Utah, southwestern and south-central Colorado, and in the mountains of Arizona and New Mexico. Winds of 30 to 40 m.p.h. piled the snow in drifts up to 9 feet deep closing many roads and isolating hundreds of persons in Arizona and New Mexico. On Wednesday, a few flakes of snow fell at La Jolla and San Diego, California. This was the first known occurrence of snow at La Jolla and only the second occurrence at San Diego. Freezing rain, mostly after midweek, glazed much of the Great Plains from the Dakotas to Wisconsin and southward to northern Texas and eastern New Mexico. Glaze covered portions of New England early and late in the week. Tornadoes occurred in the Deep South on several days--in Texas on Thursday and in Alabama and Mississippi over the weekend. One of the worst killed 2 persons, injured 26 others, and damaged or destroyed 156 homes at Huntsville, Alabama, early Monday morning, December 18. A tornado on the Island of Kauai on Sunday caused $1 million damage to property. This is the 5th tornado to strike in the Hawaiian Islands in the last 50 years.

TEMPERATURE: The cold trend over the West continued as arctic air spilled across our northern border bringing the lowest temperatures of the season. By Wednesday, subzero temperatures occurred over much of the Great Basin, the Rocky Mountains, and the northern Great Plains. Temperatures averaged below seasonal from the Pacific Ocean to the Dakotas and southward to Texas. Parts of the Great Basin and Rocky Mountains averaged 10° to 20° below normal. Temperatures over the eastern half of the Nation averaged above normal in spite of considerable cooling in the Northeast late in the week. (Summary supplied by Environmental Data Service, ESSA).

Weather continued on page 1069.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - TEXAS - Light to very heavy throughout State; controls applied in some areas. Heaviest in Briscoe, Hall, Motley, Crosby, Floyd, and Hale Counties; up to 1,000 aphids per foot killing some stands of small grains. Moderate on oats in Hopkins County. (Daniels et al.). NEW MEXICO - Averaged 8-10 per linear foot in wheat in Roswell area, Chaves County; up to 35 per linear foot in one field. (Mathews). OKLAHOMA - Ranged 50-100 per linear foot in Tillman and Washita County wheat; less than 15 per linear foot in Marshall, Garvin, and Payne County wheat; up to 35 per linear foot in Johnston and Bryan County wheat. (Okla. Coop. Sur.). IOWA - Heavy in wheat fields in Monona County; 60 percent of stand killed in 2 fields. (Iowa Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Averaged 60 per linear foot in Noble County wheat field. (Okla. Coop. Sur.). ARIZONA - Low but increasing in many barley fields in Maricopa County. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Moderate in young alfalfa stand in Grady County. (Okla. Coop. Sur.).

SMALL GRAINS

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Ranged 10-15 per linear foot in Johnston County wheat. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Damaging small grains in Bell, Erath, and Hamilton Counties and damaging 6 to 10-inch wheat and oat stands in Comal County; some controls applied. (Daniels et al.).

BROWN WHEAT MITE (Petrobia latens) - OKLAHOMA - Heavy on Cotton County wheat. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

CHINCH BUG (Blissus leucopterus) - ILLINOIS - Lightest in several years in 16 central area counties; ranged from none in 11 counties to 27 per square foot in Iroquois County. No problem expected in 1968. (Ill. Ins. Rpt.).

A MARCH FLY (Dilophus orbatus) - CALIFORNIA - Adults heavy on lawn grass at Port Hueneme, Ventura County. March fly occurrence considerable nuisance to homeowners in 1967. (Cal. Coop. Rpt.).

FIRE ANT (Solenopsis geminata) - TEXAS - Damaging improved pastureland in Corpus Christi area. (Bippert).

FORAGE LEGUMES

PEA APHID (Acyrthosiphon pisum) - MISSISSIPPI - Light to moderate, 10-15 per square foot, in Oktibbeha County alfalfa. (Dinkins). OKLAHOMA - Averaged 125 per 10 sweeps in Bryan County alfalfa. (Okla. Coop. Sur.). NEW MEXICO - Mostly light in Chaves County alfalfa (Mathews); very light in Sandoval County alfalfa (Heninger).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - MISSISSIPPI - Light in Oktibbeha County alfalfa; about 2 per square foot in 3-square-foot samples. (Dinkins).

CUCUMBER BEETLES (Diabrotica spp.) - OKLAHOMA - D. undecimpunctata howardi averaged 10 per 10 sweeps in Bryan County alfalfa. (Okla. Coop. Sur.). NEW MEXICO - D. undecimpunctata tenella adults ranged 0-3 per 25 sweeps in Roswell area, Chaves County. (Mathews).

ALFALFA WEEVIL (Hypera postica) - ARKANSAS - Egg laying in progress for 2 or 3 weeks in Mississippi County. (Miner, Boyer).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Adults averaged 3-7 per 25 sweeps in alfalfa in Roswell area, Chaves County. (Mathews).

A LEAF MINER FLY (Liriomyza trifolii) - ARIZONA - Decreasing on Maricopa County alfalfa. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

TURNIP APHID (Hyadaphis pseudobrassicae) - MISSISSIPPI - Light to moderate on garden turnips in Lowndes, Oktibbeha, and Winston Counties. (Dinkins). OKLAHOMA - Light on Marshall County turnips. (Okla. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

WESTERN PEACH TREE BORER (Sanninoidea exitiosa graefi) - CALIFORNIA - Larvae heavy in 75-acre almond planting at Tracy, San Joaquin County. (Cal. Coop. Rpt.).

CITRUS

ARMORED SCALES (Aonidiella spp.) - ARIZONA - A. aurantii infesting 3 new locations in Arcadia district of Phoenix, Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - A. aurantii medium on navel oranges at Porterville, Tulare County. A. citrina medium on orange trees in commercial planting at Oroville, Butte County. (Cal. Coop. Rpt.).

ORNAMENTALS

ARMORED SCALES - CALIFORNIA - Aspidiotus nerii and Hemiberlesia rapax heavy on lily nursery stock at Coronado, San Diego County; increasing and more widespread. (Cal. Coop. Rpt.). MARYLAND - H. rapax heavy on small leaf holly planting at University Park, Prince Georges County. (U. Md., Ent. Dept.).

BROWN SOFT SCALE (Coccus hesperidum) - CALIFORNIA - Heavy on pyracantha plants in Carmichael, Sacramento County. (Cal. Coop. Rpt.).

MEALYBUGS - CALIFORNIA - Antonina pretiosa heavy on bamboo nursery stock at Napa, Napa County. Phenacoccus solenopsis medium on hibiscus nursery stock at Calexico, Imperial County. (Cal. Coop. Rpt.).

SWEETPOTATO WHITEFLY (Bemisia tabaci) - CALIFORNIA - Generally medium on hibiscus plants at Calexico, Imperial County. (Cal. Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae medium on English primrose nursery stock at Pacifica, San Mateo County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

GIANT BARK APHID (Longistigma caryae) - OKLAHOMA - Averaged 100 per tree on red oak in Ponca City, Kay County. (Okla. Coop. Sur.). MARYLAND - Heavy on willow oak at site in University Park, Prince Georges County. (U. Md., Ent. Dept.).

AN APHID (Tamalia coweni) - CALIFORNIA - Heavy on manzanita nursery stock at Saratoga, Santa Clara County. (Cal. Coop. Rpt.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - MARYLAND - Heavy on several large white pines at College Park, Prince Georges County. (U. Md., Ent. Dept.).

PINE TORTOISE SCALE (Toumeyella numismaticum) - MARYLAND - Heavy on Austrian pine planting at Rockville, Montgomery County. (U. Md., Ent. Dept.).

WESTERN PINE BEETLE (Dendroctonus brevicomis) - TEXAS - Localized infestation found in Davis Mountains during survey of 350,000 acres in Davis and Guadalupe Mountains of western area. (Ollieu et al.).

MAN AND ANIMALS

FACE FLY (Musca autumnalis) - IDAHO - Total of 25 of 55 hibernating adults collected in Benewah and Boundary Counties during October and November infected with a parasitic nematode (Heterotylenchus autumnalis). Found in flies collected near Paul, Minidoka County, in August. (O'Keeffe).

A NOSE BOT FLY (Cephenemyia sp.) - TEXAS - Infesting numerous deer in Menard County. (Parker, Dec. 8).

SCREW-WORM (Cochliomyia hominivorax) - Total of 3 cases reported in U.S. December 10-16 as follows: TEXAS - Uvalde 1. ARIZONA - Yuma 2. Total of 272 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 1, Territorio sur de Baja California 30, Sonora 32, Chihuahua 57, Coahuila 60, Nuevo Leon 16, Tamaulipas 76. Total of 40 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operations underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 21,248,000, Arizona 940,000, California 200,000, Mexico 39,200,000. (Anim. Health Div.).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - MISSISSIPPI - Heavy on caged commercial layers in Oktibbeha County. (Dinkins).

EAR TICK (Otobius megnini) - TEXAS - Heavy on herd of cattle near Matador, Motley County. (Pallmeyer).

HARD-BACKED TICKS - CALIFORNIA - Rhipicephalus sanguineus taken in residence and on dog at Redding, Shasta County. This is northernmost occurrence in State. (Ennik). Medium in residence at Auburn, Placer County. (Cal. Coop. Rpt.). OKLAHOMA - Dermacentor albipictus ranged 1,500-2,000, including 500 replete females, on one deer in Cherokee County. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - INDIANA - Collected in pile of wood shavings at Bradford, Harrison County, October 13, 1967. Det. by G. Lehker, confirmed by T. A. Parker. This is a new county record. First reported in State in Princeton, Gibson County, in 1964; det. by W. A. Gertsch. (Huber).

A SCYTODID SPIDER (Loxosceles unicolor) - CALIFORNIA - Following specimens collected in southern area: 18 on July 10 in accumlated trash and discarded construction materials 16 miles north and 9 miles west of Blythe, Riverside County; 5 under rocks September 13 in Mule Canyon near Calico, San Bernardino County; a dead specimen August 24 in abandoned restaurant at San Bernardino, San Bernardino County. Determinations confirmed by W. A. Gertsch. (Madon, Keh).

STORED PRODUCTS

INDIAN-MEAL MOTH (Plodia interpunctella) - IOWA - Found in 2 bins of shelled corn in Polk County; absent in several other barns in central and west-central areas. (Iowa Ins. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Adequate rainfall and germination of winter annuals caused scattering and movement from valley floor into breeding grounds in Coalinga, Fresno County, and Los Banos, Merced County; concentration predicted on favorable slopes if annual growth normal. Same condition found in south Salinas Valley, Monterey County, and near Shandon, San Luis Obispo County. (Cal. Coop. Rpt.).

BOLL WEEVIL COMPLEX (Anthonomus grandis complex) - ARIZONA - Heavy in 2 areas of Avra Valley, Pima County. (Ariz. Coop. Sur.).

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Overwintering eggs on or near fruitless mulberry trees at Porterville, Tulare County; no crawlers or adults. Cryptolaemus montrouzieri larvae and adults feeding on egg masses. Larvae of a chamaemyiid fly (Leucopis sp., ocellaris group), a mealybug and aphid predator, still active and increasing at some release sites. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Larval average per cotton bale by county during lint cleaner inspections December 4-9: Cotton 105, Grady 25, Jefferson 591, Garvin 28, McClain 26, Stephens 46. Lightest (5 per bale) in Grady County and heaviest (1,167 per bale) in Jefferson County; ranged 1-80 per lint cleaner inspection in Beckham, Harmon, and Washita Counties. (Okla. Coop. Sur.). ARKANSAS - Found for first time in Monroe and Phillips Counties. This makes total of 7 new county records for 1967. (Ark. Ins. Sur.).

GOLDEN NEMATODE (Heterodera rostochiensis) - NEW YORK - Infestation found in isolated 55-acre potato field on farm in town of Prattsburg, Steuben County. Collected in PPC detection survey. Det. by I. Granek December 4, 1967. Confirmed by M. Golden. This is a new county record and first infestation outside Long Island. Location approximately 250 miles northwest of Long Island. State and Federal officials are cooperating to prevent the spread of this pest within the State and to neighboring States. Golden nematode was first found in the United States during 1941 in potato fields on Long Island. The only other known infestations in North America are confined to small areas in Newfoundland and on Vancouver Island. (PPC and N.Y. State Dept. Agr. and Mkts.).

INSECT DETECTION

New County Records

BROWN RECLUSE SPIDER (Loxosceles reclusa) - INDIANA - Harrison County. (p. 1067).

PINK BOLLWORM (Pectinophora gossypiella) - ARKANSAS - Monroe and Phillips Counties. (p. 1068).

GOLDEN NEMATODE (Heterodera rostochiensis) - NEW YORK - Steuben County. (p. 1068).

CORRECTION

CEIR 17(47):1023 - CORN LEAF APHID (Rhopalosiphum maidis) - INDIANA - Last line should read "...moderate and severe infestations lighter than in 1966 in southern one-quarter of State. (Huber)."

HAWAII INSECT REPORT

Turf, Pastures - All stages of a BILLBUG (*Sphenophorus venatus vestitus*) moderate to heavy at Paauilo, Hawaii Island; damage heavy to some Kikuyu grass lawn and pasture areas. Larvae and adults very light in Kikuyu grass pastures on Maui and in Kohala District on Hawaii Island. (Yoshioka, Miyahira). A GRASS WEBWORM (*Herpetogramma licarsisalis*) severely damaging lawns and golf courses especially in wet areas on Oahu. Adults numerous at night around porch lights in some areas. (Shinbara et al.).

General Vegetables - SWEETPOTATO LEAF MINER (*Bedellia orchilella*) larvae heavy in isolated spots of sweetpotato fields in Waiahole, Oahu; rains hampered spray operations. (Sato). CARMINE SPIDER MITE (*Tetranychus telarius*) light to moderate on snap beans in Waikane, Kaaawa, and several other windward Oahu areas; moderate in most snap bean fields in Waianae. Heavy on morning-glory adjacent to farms in Lalamilo area of Kamuela on Hawaii Island. (Yamamoto et al.). Larvae and adults of DIAMONDBACK MOTH (*Plutella xylostella*), CABBAGE LOOPER (*Trichoplusia ni*), and IMPORTED CABBAGEWORM (*Pieris rapae*) generally light on most crucifers in farms at Kamuela on Hawaii Island; *P. xylostella* larvae and adults heavy on cauliflower; *T. ni* and *P. rapae* larvae moderate in some fields of head cabbage. (LaPlante *et al.*).

Fruits - FULLER ROSE WEEVIL (*Pantomorus cervinus*) adult damage light to young citrus foliage in Kahului, Makawao, and Pukalani, Maui; damage very light in citrus orchard at 3,000-foot elevation at Olinda. (Miyahira).

Man and Animals - Total of 441 *Aedes vexans nocturnus* and 3,686 *Culex pipiens quinquefasciatus* collected in 48 light traps on Oahu during November. *A. vexans nocturnus* heaviest in Kahaluu and *C. pipiens quinquefasciatus* heavy in Haleiwa, Waialua, Kahuku, Waiahole, and Kailua. (Mosq. Cont. Br., Dept. of Health).

Beneficial Insects - SOUTH AFRICAN EMEX WEEVIL (*Apion antiquum*) larvae and adults moderate on few remaining *Emex* plants in upper Kula, Maui. (Miyahira).

Miscellaneous Insects - VAGRANT GRASSHOPPER (*Schistocerca vaga*) female captured in Hanapepe, Kauai, December 8; twelfth adult taken to date. (Ikehara).

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-DECEMBER 1967 TO MID-JANUARY 1968

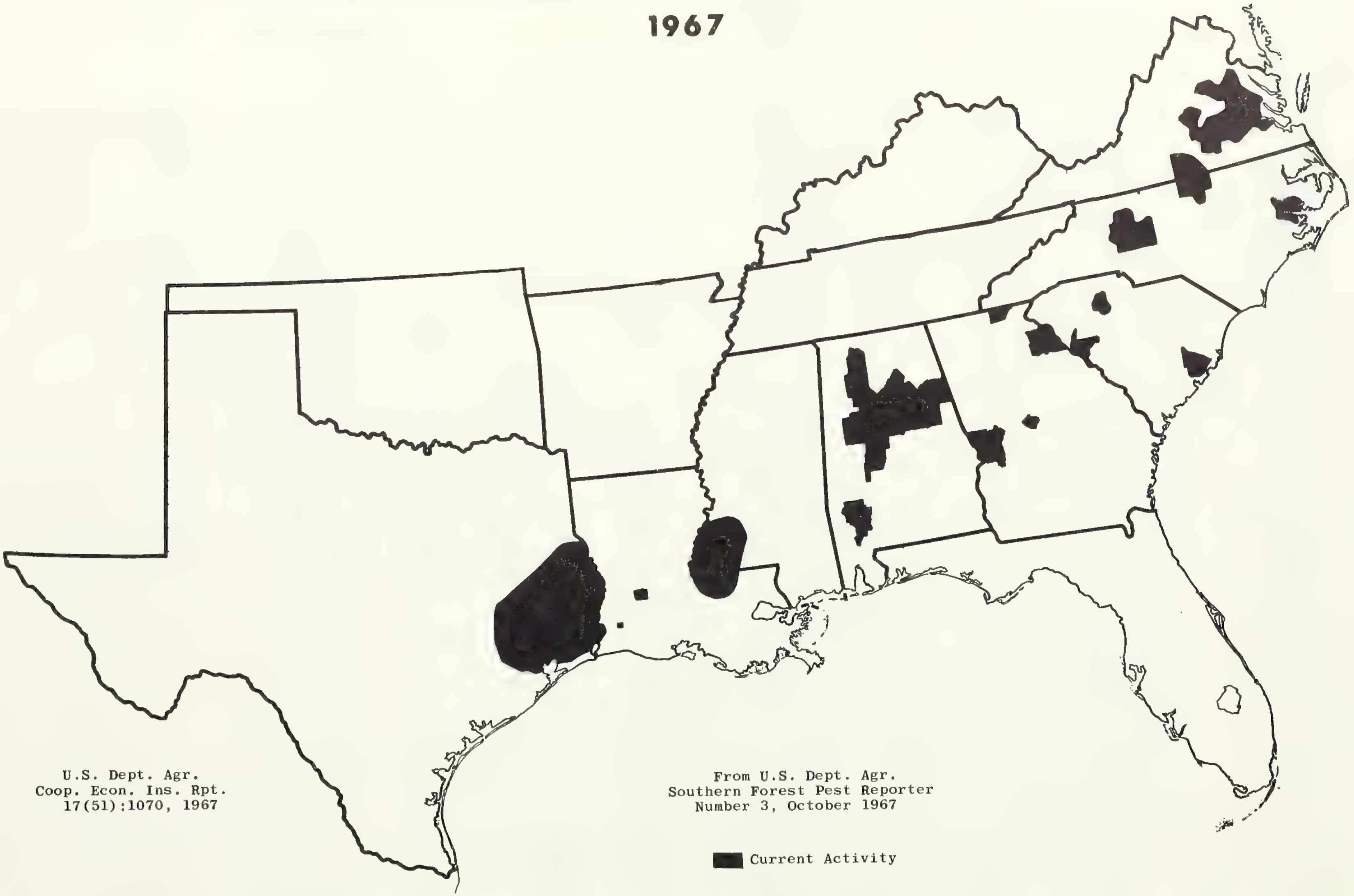
The Weather Bureau's 30-day outlook for mid-December to mid-January calls for temperatures to average below seasonal normals over most of the Nation except for near to above normal along the gulf coast and in the Southeast. Greatest departures from normal are anticipated over the central and southern Plateau and the central and southern Plains. Precipitation is expected to exceed normal from the southern Plateau eastward to the Atlantic seaboard, and also along the eastern slopes of the Continental Divide. Subnormal precipitation is predicted from Great Lakes eastward to northern New England, and also for the Pacific Northwest. In unspecified areas near normal amounts are indicated. Where below normal temperatures are predicted, much of the precipitation is expected to be in the form of sleet and snow.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

Weather continued from page 1064.

SOUTHERN PINE BEETLE ACTIVITY IN SOUTHEASTERN AREA

1967



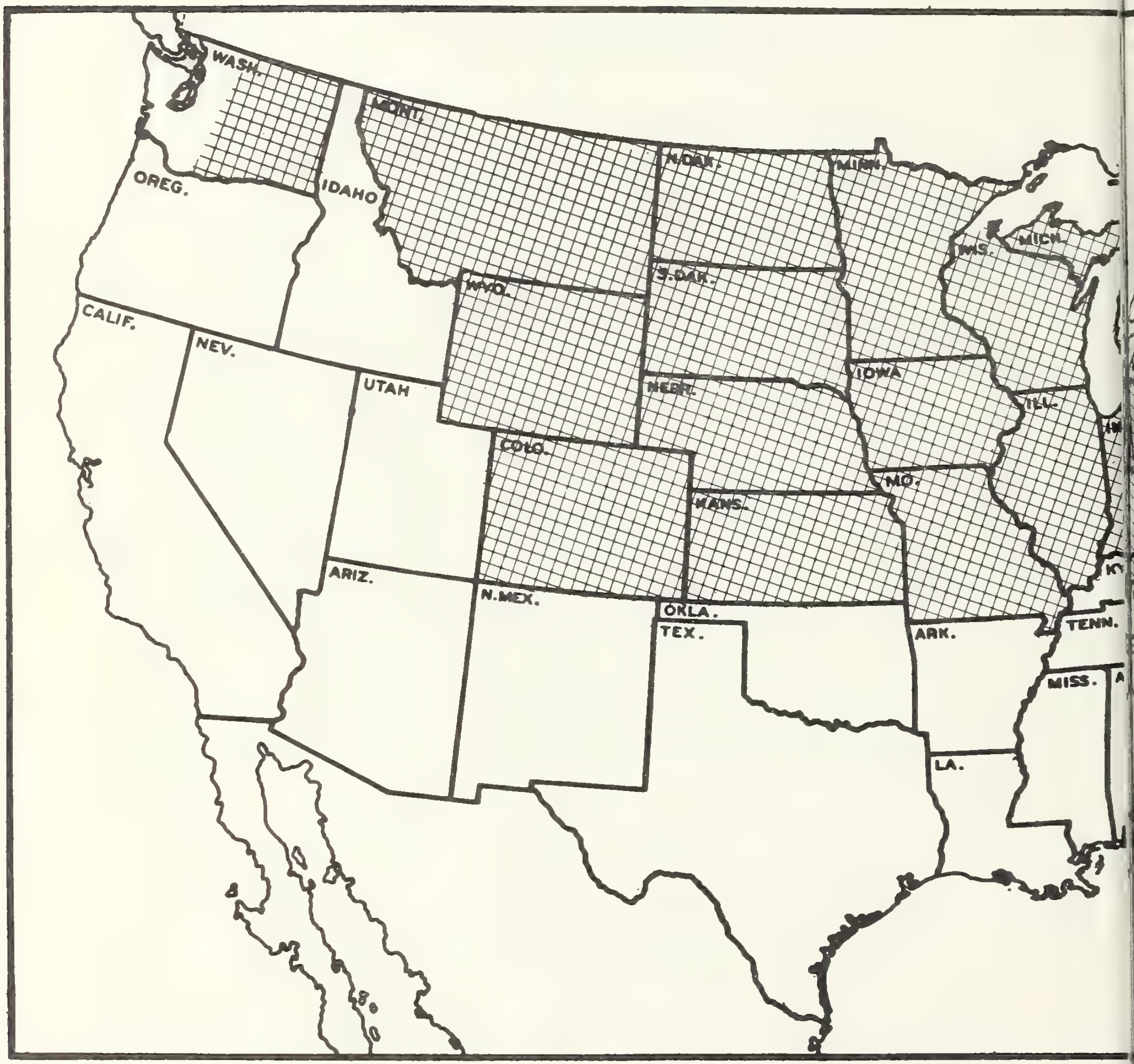
From U.S. Dept. Agr.
Southern Forest Pest Reporter
Number 3, October 1967

■ Current Activity

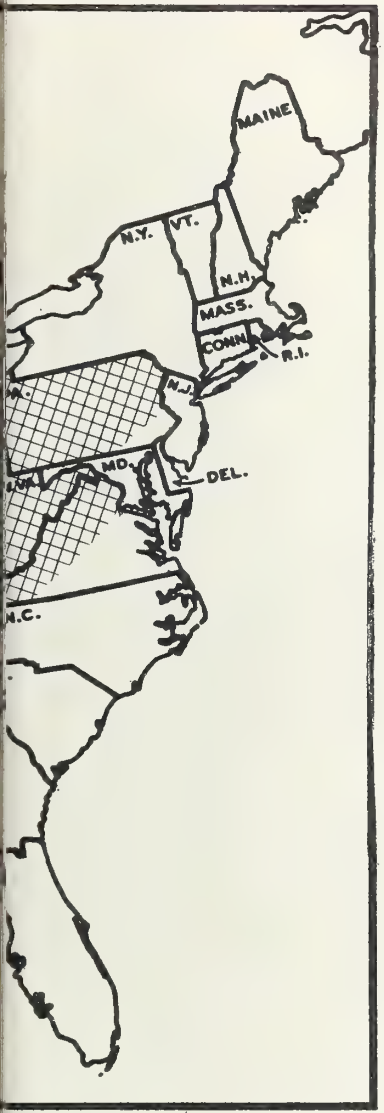
U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
17(51):1070, 1967

BLACK STEM RUST QUARANTI

Areas shaded are designated as eradication



Revised September 30, 1967



Department of Agriculture
ltural Research Service
Pest Control Division
rating with affected States

Restrictions are imposed on the movement of regulated articles as follows:

1. Berberis, Mahoberberis and Mahonia Plants:

   a. Rust-susceptible plants--movement prohibited.

   b. Rust-resistant plants--movement allowed under certificate or permit.

2. Seeds and Fruits of Rust-resistant Berberis and Mahoberberis Plants:

   a. Between white or from shaded into white--no restrictions.

   b. From white into shaded--movement prohibited.

   c. Between shaded--movement allowed under permit.

3. Seeds and Fruits of Rust-resistant Mahonia Plants.

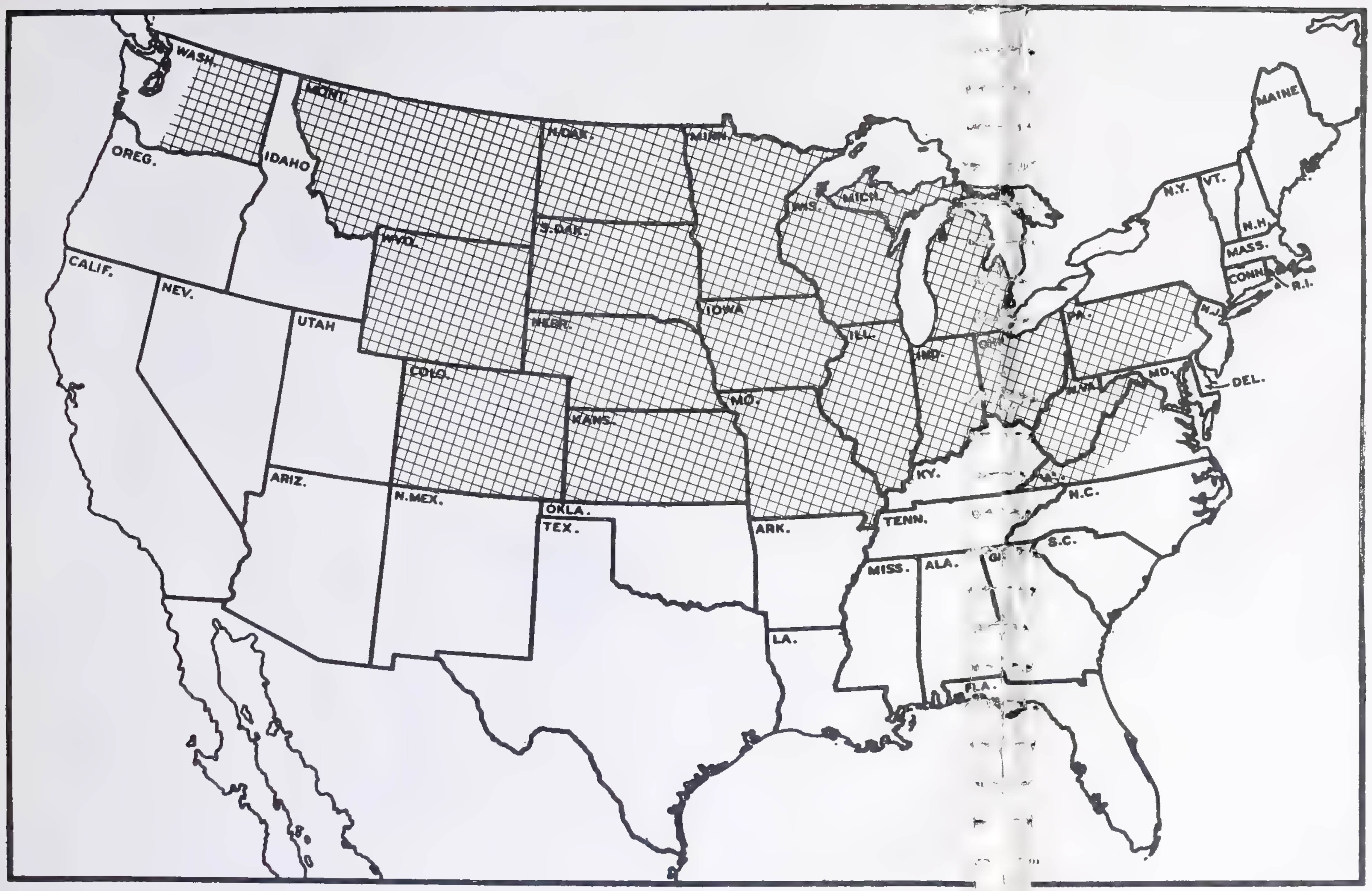
   a. Between white or from shaded into white--no restrictions.

   b. From white to shaded or between shaded--movement allowed under permit.

CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL INSPECTOR OR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT BOUNDARIES OF ERADICATION AREAS AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

BLACK STEM RUST QUARANTINE

Areas shaded are designated as eradication areas



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2. Seeds and Fruits of Rust-resistant Berberis and Mahoberberis Plants:
   a. Between white or from shaded into white--no restrictions.
   b. From white into shaded--movement prohibited.
   c. Between shaded--movement allowed under permit.
3. Seeds and Fruits of Rust-resistant Mahonia Plants.
   a. Between white or from shaded into white--no restrictions.
   b. From white to shaded or between shaded--movement allowed under permit.

CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL INSPECTOR OR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT BOUNDARIES OF ERADICATION AREAS AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

U. S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division
Cooperating with affected States

Revised September 30, 1967

SURVEY METHODS

Selected References 1961*

Part V

Additional copies of Parts I through V of this bibliography are available from Survey and Detection Operations.

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Prepared in Plant Pest Control
Division

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
17(51):1071-1076, 1967

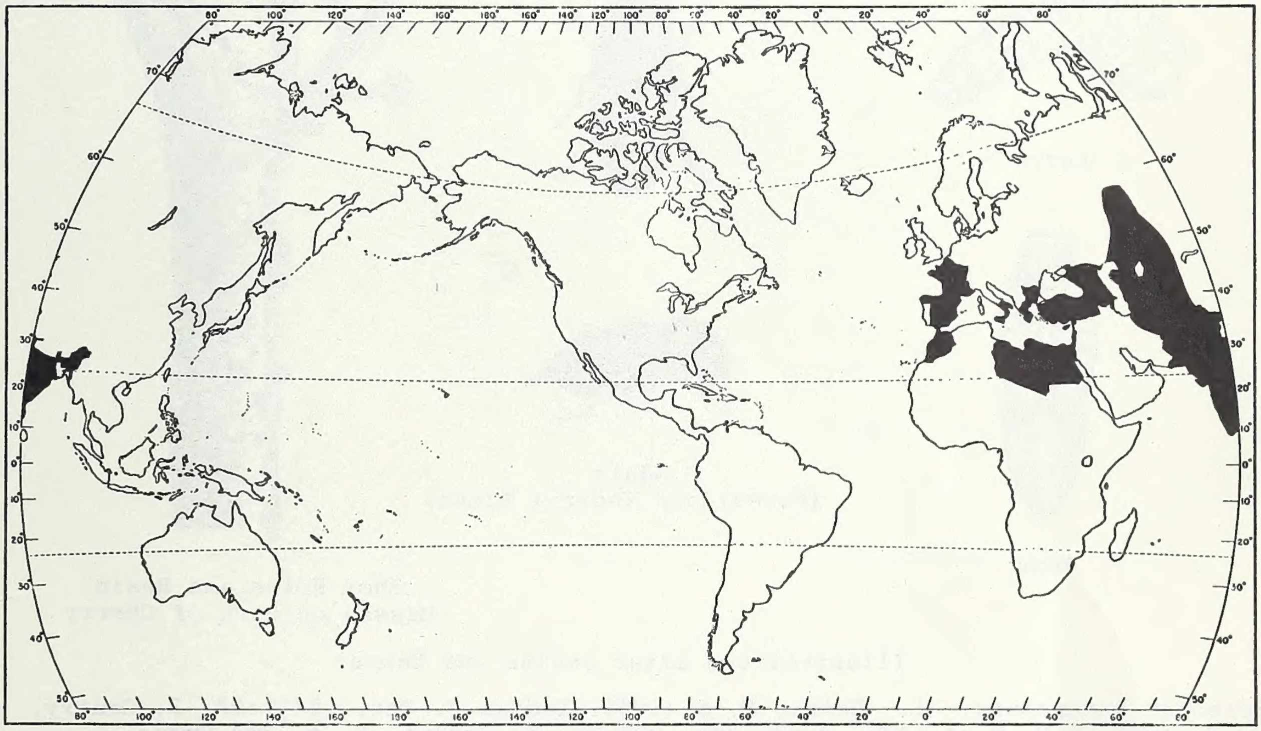
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

ALMOND SCOLYTID (Scolytus amygdali Guerin)

Economic Importance: Adults and larvae of this beetle cause severe damage to fruit trees by boring, tunneling, and feeding beneath the bark. A heavy infestation of larvae can reduce the inner bark to powder. Numerous larval galleries are formed from each egg gallery made by the adults. The damage may cause death of the tree. Adults bore into twigs and tunnel into limbs. This injury is marked by the hardening of sap (gum) at the entrance holes. Diseased and weakened trees as well as healthy trees may be seriously damaged. Abandoned dead and dying trees are a breeding source for future infestations in other areas. Heavy damage has been recorded in Libya.

Distribution: Afghanistan, Bulgaria, Cyprus, Egypt, France, Greece, India, Israel, Italy (Sicily and southern mainland), Lebanon, Libya, Morocco, Spain, Turkey, USSR (Caucasus and southern Ural Mountain areas), and West Pakistan. Also recorded from Central Asia.

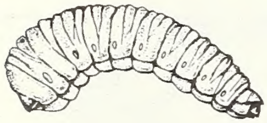
Hosts: Almond, apricot, plum, peach, cherry, other stone fruits; apple and quince.



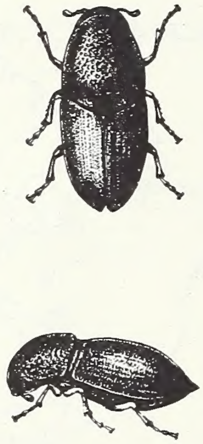
General Distribution of Scolytus amygdali Guerin

Life History and Habits: The biology under conditions in southern West Pakistan is as follows: Larvae overwinter in the ends of galleries in tree trunks or limbs. Pupation takes place in the early spring with adults emerging from the trees 10 to 15 days later. Mating occurs in 2-3 days in pairing chambers prepared by the males in the tree bark. After fertilization, the female makes an egg gallery. One male may fertilize two or more females. A female lays 50-70 eggs singly in pocket-like depressions along the 50-70 mm. long egg gallery. Hatching takes place in 1 to 3 days. Larvae then excavate galleries at right angles to the egg gallery and parallel to each other. Larval galleries average 12-73 mm. in length, curve irregularly, and gradually increase in size during the 4 weeks of larval development. Pupation occurs in cells made at the ends of the larval galleries. There are 4 generations a year with an average adult life span of 7.4 days.

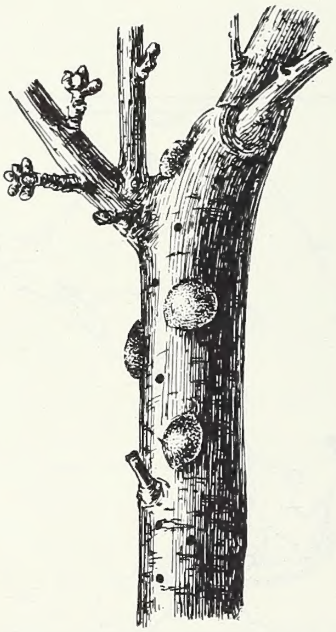
Description: EGG - Diameter 0.5 mm. Extremely small, shiny, spherical, and creamy. LARVA (full-grown) - Length 6 mm. Oblong and cylindrical, legless, wrinkled, curved, and creamy white. Head small, brown, and partly concealed in the enlarged anterior portion of the body. PUPA - Length 4 mm. Soft, white or creamy white; head hidden beneath prothorax; legs and wing cases pressed close to the thorax. ADULT - Length 4-4.5 mm. Elongate oval, light yellow and brown, somewhat shiny with sparse white hairs. Elytra longer than thorax; punctations ranging from coarse at base to small at apex. Thorax darker than elytra coarsely punctate with sparse hairs. Antenna, tip of femur, tibia, tarsus, and apical elytral margin yellowish-brown.



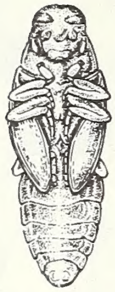
Larva



Adult
(Dorsal and Ventral Views)



Shot Holes and Resin
Masses on Bark of Cherry



Pupa

Illustrations after Janjua and Samuel

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